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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/632,530	08/04/2000	J. Richard Spears	DYNX.0002	1489

27405 7590 05/21/2003

THEROX, INC.  
2400 MICHELSON DRIVE  
IRVINE, CA 92612

EXAMINER

BARRY, CHESTER T

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 05/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/632,530

Applicant(s)

SPEARS ET AL.

Examiner

Chester T. Barry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims 40, 41, 64-69

- 4) ☒ Claim(s) 1, 30, 38, 39, 76 and 77 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

- 5) ☒ Claim(s) 78 is/are allowed.

- 6) ☒ Claim(s) \* is/are rejected. \* 1, 30, 38, 39, 64-69, 76, 77

- 7) ☒ Claim(s) 40 and 41 is/are objected to.

- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Claims 1, 30, 63, 76, 77 are rejected under 35 U.S.C. Sec. 102(b) as anticipated by Lerner. Lerner describes an apparatus for treating wastewater. The apparatus comprises a gas-enrichment assembly (3) adapted to receive wastewater (at 15) and a treatment gas, i.e., oxygen (51 admitted to gas-enrichment assembly 3 at 67). The gas-enrichment assembly is configured to generate a gas-enriched fluid, namely, oxygen-enriched water flowing through conduit 23, for example. A delivery assembly for receiving the oxygen-enriched water from the gas-enrichment assembly, namely, the combination of pump 21, conduit 24, flowmeter 25, heat exchanger 27, valve 28, flowmeter 39, conduit 77, nozzle 9, and tower 1, is coupled to the gas-enrichment assembly 3 via conduit 23. Moreover, the delivery assembly for receiving the oxygen-enriched water from the gas-enrichment assembly is "in a fluid communication" [sic, "in fluid communication"] with the wastewater because liquid flowing out of the delivery assembly, namely, at the bottom of the tower 1 through conduit 39, is clearly in liquid flow communication with incoming wastewater because both liquid flows commingle in tank 37. See column 7 lines 54 – 57. Finally, the delivery assembly expels the oxygen-enriched liquid in a substantially bubble-free manner into the wastewater because there is no indication that a gas is sparged below the liquid level of the liquid in the sump 35. It is conventional that in gas/liquid contacting, i.e., gas scrubbing / absorption equipment of the tower 1 type, gas is admitted above the liquid level of liquid in the bottom of the tower, as shown for example by USP 6398971 to Butters. Accordingly, there is substantial evidence that the oxygen-enriched liquid, as it is expelled from tower portion of the delivery assembly, is expelled in a substantially bubble-free manner into

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the wastewater contained in tank 37. Per claim 76 and 77, the commingling of the oxygen-enriched liquid fed to tower 1 and accumulated in the sump 35 with the incoming wastewater at tank 37 clearly permits the transfer of oxygen from the oxygen-enriched liquid to the wastewater.

Per claim 30, the delivery assembly includes fluid conduit 77 (a liquid conduit) as well as fluid conduit 1 (gas tower 1).<sup>1</sup>

Claims 38 and 39 are rejected under 35 USC §103(a) over Lerner and Isahaya for the reasons give at pages 11-12 of the action mailed 2/5/03.

Claims <sup>64</sup>~~68~~ – 69 are rejected under §103 over Lerner as applied to claim <sup>63</sup>~~64~~ above, further in view of Troost for the reasons given at the last page [inadvertently labeled as “page 3”] of the February 5, 2003, Office action.

The rejection of claim 40 over GB '247 is withdrawn insofar as the reference does not describe recycling (i.e., expelling) at least a portion of the gas-enriched liquid 6 flowing through conduit 1 back to incoming wastewater 10 / m.

Claims 40 – 41 are objected to, but allowable over art.

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<sup>1</sup> The skilled artisan understands that a fluid can be a gas, liquid, or other type of flowable material.

Claim 1 is objected to under 37 CFR 1.75 for the recitation of "in a fluid communication" where it appears that "in fluid communication" was intended.

Applicant's arguments were carefully considered, but were not persuasive with respect to the claims rejected hereinabove. Please note that in Lerner, liquid trickles down column packing in tower 1 as gas flows up. A substantially "bubble free" operation is found there. Applicant's liquid/liquid gas enrichment system is not claimed. It is noted that like GB '247, USP 4536293 to Babineaux describes a device for enriching wastewater with gas-enriched liquid. Specifically, as in Babineaux, liquid flowing through spray tower 12 is enriched in oxygen as the spray is airborne. As it falls to tank 14, it fluidically mixes with incoming wastewater at 18.

The examiner did not state that applicants' comments with respect to the 71 statements were required under 37 CFR 1.105. In fact, the examiner stated admissions, denials, or a statement that applicant lacked information on which to form a belief etc., was "not required" under that rule.

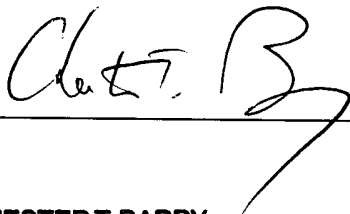
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Respectfully,

A handwritten signature in black ink, appearing to read "Chestert B.", is written over a horizontal line.

**CHESTERT T. BARRY**  
**PRIMARY EXAMINER**

703-306-5921